Notice of Allowability	Application No.	Applicant(s)	
	10/085,776	CHOI ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/27/2002*.

2. ☒ The allowed claim(s) is/are *1-8*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

The application has been amended as follows:

Claim 5, line 9 "a inverse" is changed to –an inverse--.

Claim 5 line 10 "calculate" is changed to –calculating--.

Figure 6, element 600 "ENCODER #1" is changed to –"DECODER #1--.

Figure 6, element 605 "ENCODER #2" is changed to –"DECODER #2--.

Allowable Subject Matter

1. Claims 1-8 are allowed.

Reason for Allowance

2. The following is an examiner's statement of reasons for allowance: The instant application claims An apparatus using a method for decoding a variable length TFCI bits for a DSCH or for a DCH in a reception device for a mobile communication system, which receives a signal of encoded TFCI bits for the DSCH or the TFCI bits for the DCH, encoded with orthogonal codes, the apparatus comprising: a controller for informing a code length information and zero inserting positions to an inserter; wherein the inserter inserts "0"s in the received signal at the zero inserting position to form a zero-inserted signal; a inverse fast Hadamard transformer (IFHT) having multiple operating stages, for calculate correlation values of the zero-inserted signal with the orthogonal codes wherein, the I'FHT stop performing inverse fast Hadamard transform

at a given operating stage correspond to the code length information; and a comparator for comparing the correlation values and outputting a Walsh index correspond to the highest correlation value. Further, the instant application claims methods for determining inverse fast Hadamard transform (IFHTI stages based on the length of the TFCI bits; sequentially performing inverse fast Hadamard transform on the zero-inserted signal up to the determined IFHT stages; and after completion of the inverse fast Hadamard transform by the determined IFHT stages, outputting index of an orthogonal code of which correlation value is most large than other correlation value achieved by the determined IFHT stage as decoded TFCI bits.

The prior art Kim et al. (US PAT 6882636) teaches an apparatus and method for encoding/decoding a transport format combination indicator (TFCI) in a CDMA mobile communication system. In the TFCI encoding apparatus, a one-bit generator generates a sequence having the same symbols. A basis orthogonal sequence generator generates a plurality of basis orthogonal sequences. A basis mask sequence generator generates a plurality of basis mask sequences. An operation unit receives TFCI bits that are divided into a first information part representing biorthogonal sequence conversion, a second information part representing orthogonal sequence conversion, and a third information part representing mask sequence conversion and combines an orthogonal sequence selected from the basis orthogonal sequence based on the second information, a biorthogonal sequence obtained by combining the selected orthogonal sequence with the same symbols selected based on the first information

part, and a mask sequence selected based on the biorthogonal sequence and the third information part, thereby generating a TFCI sequence.

The prior art Song (US PAT 6813506) teaches a method and matrixes for transmitting an transport format combination indicator. The matrixes according to the invention comprising five column vectors of 32 elements of binary code derived from OVSF codes which are to be multiplied to the lower bits of a TFCI and one column vector of 32 elements of 1 when (32,6) codes are used.

The prior art Obuchi et al. (US PAT PUB 2004/0015750) teaches an error rate of a TFCI of a transmission data format, and when an error rate of the TFCI becomes worse, a request to increase only the power of the TFCI is issued to the transmitter. The error rate of the TFCI is computed from the error detection result of a TrCH. Especially when the data length of the TrCH is relatively short, this method is not applied, but wasteful power consumption increases. When the data length of the TrCH is long, this method is applied to realize error rate control with the wasteful power consumption minimized.

The prior art TSG-RAN Working Group1 meeting #7 TSGR1#7(99)D69 Hanover, Germany, August 30 – September 3, 1999 Agenda Item: Ad Hoc 4 Report and Text Proposal Source: Samsung Electronics Co. Ltd teaches TFCI coding for FDD (rev. of R1-99b61)

The prior art TSG-RAN Working Group 1 meeting #5 TSGR(99)913 Helsinki, Filand

July 13-16, 1999 Agenda item: Source: Samsung teaches Harmonization impact on TFCI and New Optimal Coding for extended TFCI with almost no Complexity increase

The prior art TSG-RAN Working Group 1 meeting #7 TSGR1#7(99)99b60 Hanover, Germany August 30 – September 3, 1999 Agenda item: Source: Samsung teaches New Optimal Coding for extended TFCI with almost no Complexity.

The prior arts alone or in combination fail to jointly suggest or teach the claimed combination of features as taught by the instant application. The prior arts do not specifically teach a controller for informing a code length information and zero inserting positions to an inserter and the IFHT stop performing inverse fast Hadamard transform at a given operating stage correspond to the code length information; determining inverse fast Hadamard transform (IFHTI stages based on the length of the TFCI bits; sequentially performing inverse fast Hadamard transform on the zero-inserted signal up to the determined IFHT stages; and after completion of the inverse fast Hadamard transform by the determined IFHT stages, outputting index of an orthogonal code of which correlation value is most large than other correlation value achieved by the determined IFHT stage as decoded TFCI bits. Therefore claims 1-8 are to be deemed allowable over prior art.

3. Prior art pertinent to the application but not used in office action:

- US 6868075 B1 USPATMethod and apparatus for compressed mode communications over a radio interface Narvinger; Per et al.

- US 20010026543 A1 US-PGPUBApparatus and method for assigning a common packet channel in a CDMA communication systemHwang, Sung-Oh et al.
- US 20010046220 A1 US-PGPUBApparatus and method for assigning a common packet channel in a CDMA communication systemKoo, Chang-Hoi et al.
- US 20010053140 A1 US-PGPUBApparatus and method for assigning a common packet channel in a CDMA communication systemChoi, Sung-Ho et al.
- US 20030088819 A1 US-PGPUBError correction/decoding method Uga, Shinsuke
- US 20050018614 A1 US-PGPUB Data-rate detection in cdma systems Kiran, T.

Conclusion

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA

Seema S. Rao 1/24/06
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FIG.6